

values. Thanks to a more detailed statistical analysis, Bushinsky et al.³ show that, by restricting the range of HCO_3 values to a maximum of 10 mEq/L, the slope of the linear regression acquires a value of 1.5 (exactly the same slope reported by Winters), while the slope reaches 1.2 for values of HCO_3 between 10.1 and 25 mEq/L.

To summarise, in our opinion, the more accurate way to predict the expected value of pCO_2 in chronic metabolic acidosis, and hence to correctly deduce the presence of mixed acid-base disorders, is by using different formulae according to the range of HCO_3 values. Therefore, if the value of HCO_3 is greater than 10 mEq/L, as it usually happens, Bushinsky's formula should be considered. The use of Winters' formula seems appropriate only for lower values of HCO_3 .

For these reasons, in the cases reported by Rubio et al., where the value of HCO_3 is much greater than 10 mEq/L, although the use of Winters' formula leads to the correct diagnosis (i.e., mixed acidosis), we conclude that a more orthodox approach would be to resort to the formulae of Bushinsky et al.

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Suicides and forensic pathology sources in Spain[☆]



Suicidios y fuentes médico-forenses en España

Dear Sir:

We have carefully read the Giner and Guija article about the disparity regarding the number of deaths due to suicide, which exists between the Instituto Nacional de Estadística (INE) [National Statistics Institute] and the Institutos de Medicina Legal (IML) [Legal Medicine Institutes] of Spain¹; we share their opinion in relation to the difficulties in information flows and the need to continue improving the cause-of-death recording system we share. Although the authors assume that the forensic pathology sources do not provide more valid data than the official statistics, in our opinion, their observations are compatible with literature on the topic, which prefers the former as standard of reference as far as mortality due to suicide is concerned.²

As regards methodology, they suggest the use of an indicator they call "number of provincial identified suicides" (NPIS) and define it as "the highest number of suicides in a province and year", either from the INE or the corresponding IML. This indicator is based on the assumption that "it is unlikely that suicides which [are] not such are [recorded]". However, it has been verified that there is an incorrect record regarding suicide because of deaths due to other causes, such as unintended falls.³ On the other hand, even if both the INE and the IML data were equally comprehensive and valid, slight discrepancies in their totals

could be expected, since the first corresponds to Spanish residents who died in Spanish territory according to the province of residence, and the second to all judicial deaths which occurred in each province, regardless of nationality and place of residence, which is a point we have already had the opportunity to point out before.⁴

Regarding the results, data included in Table 2 of the Giner and Guija article are analysed taking into account only the values corresponding to the 34 provinces for which there are both INE and IML data available in each and every of the five years of study, observing as follows (Fig. 1):

- As expected, given the known underestimation of mortality due to suicide in the official mortality statistics,^{3,5} the INE data generally show a lower number of cases than the IML data. Globally, IML sources provide more cases than the INE every year, with annual differences ranging from a minimum of 9.3% in 2006 to a maximum of 18.7% in 2010.
- The INE and IML data show different tendencies in terms of progress in mortality due to suicide, an aspect which is very relevant in public health⁶: according to the INE, the number of deaths must have suffered significant annual variations in 2010 to be positioned under the 2006 values; instead, the IML data would reflect a sustained increase from 2006 to 2008, and a decreasing tendency from such year onwards.

Finally, we would like to draw the attention to the fact that in Spain, both scientific works and forensic pathology sources-based information systems use *ad hoc* access methods or knowledge directly from the result of the post-mortem examination of the body.^{2,7–9} This is due to the scarce development of IML internal records, a point we had already highlighted eight years ago.⁷ The Giner and Guija article portrays this situation, given that when

[☆] Please cite this article as: Xifró A, Suelves JM, Martín-Fumadó C, Gómez-Durán EL. Suicidios y fuentes médico-forenses en España. *Rev Psiquiatr Salud Ment (Barc)*. 2015;8:46–47.

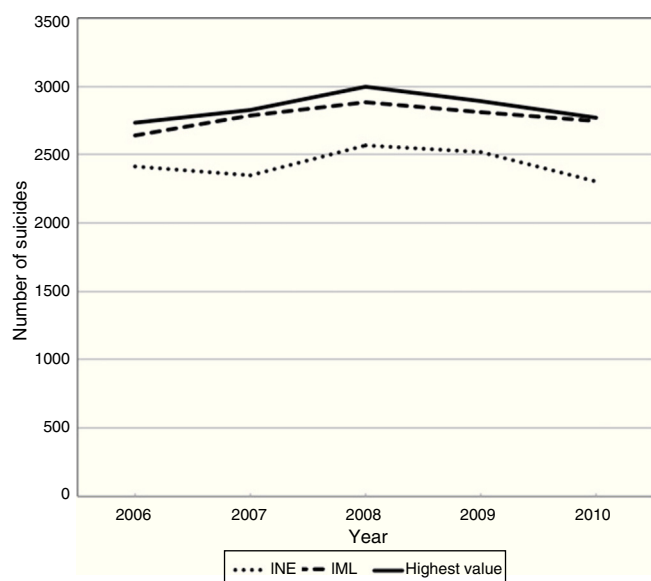


Figure 1 Annual number of deaths due to suicide 34 Spanish provinces according to a source of information (own creation based on data obtained from Giner and Guija¹). The sum of the number of provincial deaths is shown for each of the sources of information and for the highest value obtained by the two sources of information in each province (highest value). IML: Institutos de Medicina Legal [Legal Medicine Institutes]; INE: Instituto Nacional de Estadística [National Statistics Institute].

taking a closer look at the IML figures of the Spain group, they had to resort to a straight communication with the directors of the 33 different sites, out of which 15 provided incomplete data or did not provide any data at all.¹ In addition, the methodology used by the different sites to compile the data is unknown, and therefore the existence of possible differences therein both among sites and within one site among zones or periods also remains unknown. In our opinion, the recently set up Consejo Médico Forense [Forensic Medical Council]¹⁰ could promote the development of information systems which facilitate IML health care and social projection. We believe that if data obtained from IML were accurately and homogeneously recorded, they would provide more valid and comprehensive information about mortality due to suicide and other external causes than most sources available in Spain.

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